

Claims

1. A scanner having a moveable part and a position control device, wherein the position control device comprises the following:
 - a controller which is constructed for correcting a setpoint deviation of a controlled variable, particularly in the presence of a command variable which is constant in time;
 - a correction device for correcting a control error of the controller which arises from a change in the setpoint of the controlled variable with time; and
 - an actuating device for adjusting a position of a moveable part of the scanner,wherein the controller and the correction device comprise mutually separate signal inputs in each case for receiving an input signal, wherein a combination device is provided for combining output signals of the controller and of the correction device to form a combination signal and wherein the combination device is connected at an input side to a signal output of the controller and to a signal output of the correction device and at an output side to the actuating device.
2. The scanner as claimed in claim 1, wherein the correction device comprises a finite impulse response (FIR) filter which comprises a signal input which is connected to or is identical to the signal input of the correction device.
3. The scanner as claimed in claim 2, wherein a delay element is connected in series with the FIR filter between the signal input of the correction device and the signal output of the correction device.

4. The scanner as claimed in claim 1, wherein the correction device comprises a storage device for storing a plurality of correction values for correcting an output variable of the controller.
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5. The scanner as claimed in claim 4, which comprises a determining device for determining a correction value and which comprises a second combination device for combining an output signal of the storage device with an output signal of the determining device, wherein in each case an input of the second combination device is connected to an output of the determining device and, respectively, to an output of the storage device and wherein an output of the second combination device is connected to an input of the storage device.
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6. The scanner as claimed in claim 5, wherein the determining device is a finite impulse response (FIR) filter which is part of the correction device and which comprises a signal input which is connected to or is identical to the signal input of the correction device.
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7. The scanner as claimed in claim 5, wherein a low-pass filter is connected between the output of the storage device and the input, connected thereto, of the second combination device.
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8. The scanner as claimed in claim 3, wherein the correction device comprises a storage device for storing a plurality of correction values for correcting an output variable of the controller.
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9. The scanner as claimed in claim 8, which comprises a determining device for determining a correction value and which comprises a second combination device for combining an output signal

- of the storage device with an output signal of the determining device, wherein in each case an input of the second combination device is connected to an output of the determining device and, respectively, to an output of the storage device and wherein an output of the second combination device is connected to an input of the storage device.
- 10 10. The scanner as claimed in claim 9, wherein the determining device is a finite impulse response (FIR) filter which is part of the correction device and which comprises a signal input which is connected to or is identical to the signal input of the correction device.
11. The scanner as claimed in claim 9, wherein a low-pass filter is connected between the output of the storage device and the input, connected thereto, of the second combination device.
12. The scanner as claimed in claim 1, wherein an elimination device for eliminating components of command signals, which do not change repeatedly in the same manner, is connected between a signal input of the position control device for the command signals and the signal input of the correction device.
13. The scanner as claimed in claim 1, wherein the actuating device is connected to the moveable part, so that the actuating device can adjust the position of the moveable part depending on combination signal.
14. A method for operating a scanner, wherein a command variable is used at least a part of which changes repeatedly in the same manner,

wherein a command signal corresponding to the command variable is supplied to a controller,

wherein the controller is constructed for correcting a setpoint deviation in the presence of a command variable which is constant in time and wherein a control error of the controller which arises from the change in the command variable is corrected by

- evaluating a setpoint deviation of the position of the moveable part or an equivalent variable;
- obtaining from this a correction signal; and
- changing an output signal of the controller by using the correction signal;

wherein a position of a moveable part of the scanner is adjusted using the output signal which has been changed by using the correction signal.

15. The method as claimed in claim 14, wherein the setpoint deviation is evaluated over at least one cycle of the change in the command variable and a course, obtained from this, of the correction signal is used for correcting the control error in at least one later cycle of the change in the command variable.

16. The method as claimed in claim 15, wherein the setpoint deviation is repeatedly evaluated over in each case one cycle of the change in the command variable and wherein in each case correction signals by means of which the control error can only be partially compensated, particularly the setpoint deviation can only be reduced to a fraction of the setpoint deviation of the cycle, are obtained from one of the cycles.

17. The method as claimed in claim 14, wherein the correction signal is obtained by a correction

device having a correction device signal input
which is separate from a controller signal input
of the controller for receiving an operating
signal and wherein the correction device has a
5 correction signal output for outputting the
correction signal.

18. The method as claimed in claim 17, wherein a
second part of the command variable or,
10 respectively, a further command variable does not
change repeatedly in the same manner and wherein,
for correcting the control error of the
controller, a signal which corresponds to the
second part or, respectively, to the further
15 command variable is used to operate the
controller, but is eliminated from a signal which
is supplied to the correction device signal input.

19. The method as claimed in claim 14, wherein the
20 scanner is used to obtain information of scannable
objects or areas, which are obtained via incident
electromagnetic radiation.

20. The scanner as claimed in claim 10, wherein a
25 low-pass filter is connected between the output of
the storage device and the input, connected
thereto, of the second combination device.